

# “NUCLEAR POWER IN UTAH: COSTLY, RISKY AND UNNECESSARY”

By Christopher Thomas, Executive Director

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# **OUR CONCERNS ABOUT THE GREEN RIVER NUKES (And more generally nuclear power in Utah)**

- ▶ **Cost**
- ▶ **Water Use**
- ▶ **Safety**
- ▶ **Alternatives Exist**

# NUCLEAR: COSTS TO CONSUMER

- 11 cents to 18 cents per kilowatt hour
- Utah currently pays roughly 7.5 cents
- National average about 10 cents
- One Utah Power Producing entity (2012): Natural gas 6.5 cents; wind 7; solar PV 10; nuclear 11
- Those high prices exist even with big federal supports for nuclear
  - Caps on liability
  - Federal loan guarantees

# Wall Street on Nuclear

- “Natural gas would have to be more than 50 percent more expensive than it is today before building a new nuclear power plant would make clear economic sense,” – Standard & Poor’s
- “In liberalised energy markets, building nuclear power plants is no longer a commercially feasible option: they are simply too expensive.” – The Economist
- “It’s just hard to justify nuclear, really hard. Gas is so cheap and at some point, really, economics rule,” Jeff Immelt, the chief executive of General Electric, one of the world’s largest suppliers of atomic equipment, told the Financial Times. “So I think some combination of gas, and either wind or solar ... that’s where we see most countries around the world going.”



# CWIP: Risk to Customers

- “Allowing utility construction with possibly large rate increases. Progress Energy Florida reported that the average Pro rate increase was nearly \$50 per month. According to Mike Fasano, Florida Public Service Commission, “the average rate increase of 10% to 15% for capital additions..” —
- A Utah legislative proposal to allow a 10% rate increase for a nuclear power plant. According to the Utah Public Service Commission, “the average rate increase of 10% to 15% for capital additions..” —



# NUCLEAR TODAY

- Nuclear “renaissance” fading
- Considerable subsidies not enough
- Cost overruns remain a problem

## **Duke Energy and its William States Lee III reactors**

2007 Cost Estimate: \$5-\$6 billion.

2008 Cost Estimate: \$11-\$14 billion.

2011 Cost Estimate: ???

## **Progress Energy and its two Levy County reactors**

2007: Cost Estimate: \$9.4 billion

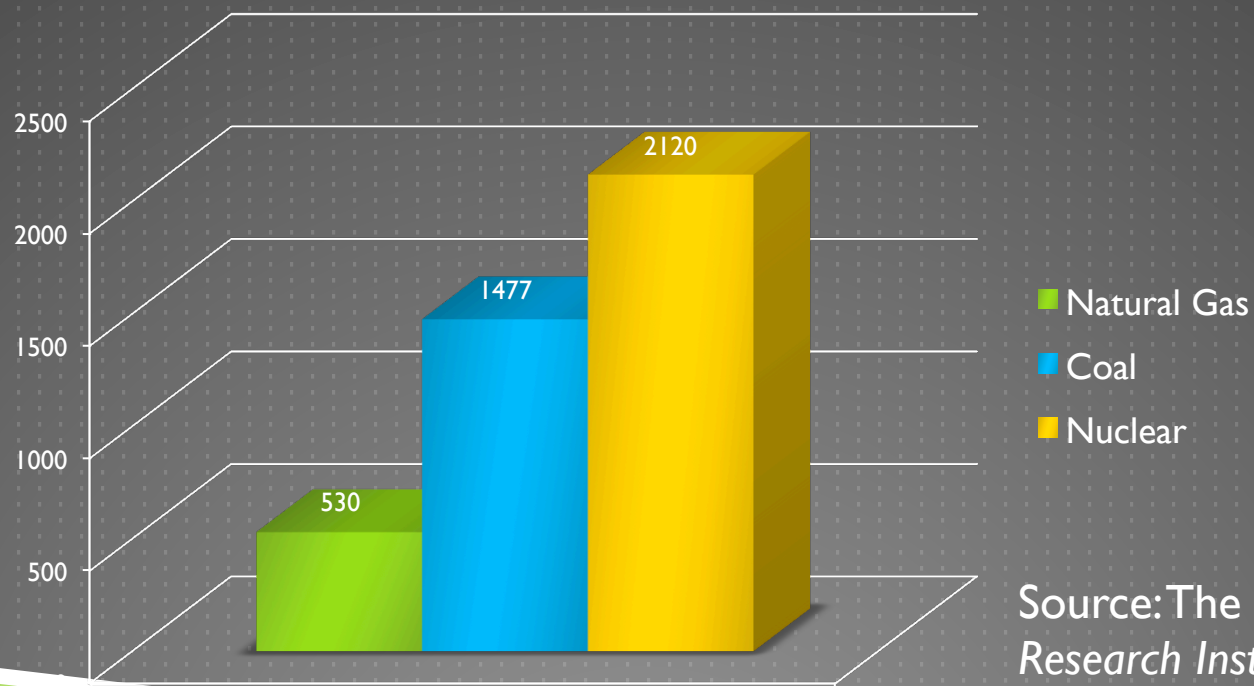
2008: Cost Estimate: \$13 billion

2011: Cost Estimate: \$17.2 billion

# NUCLEAR POWER WATER USE

- Uses much more water than other ways of making electricity

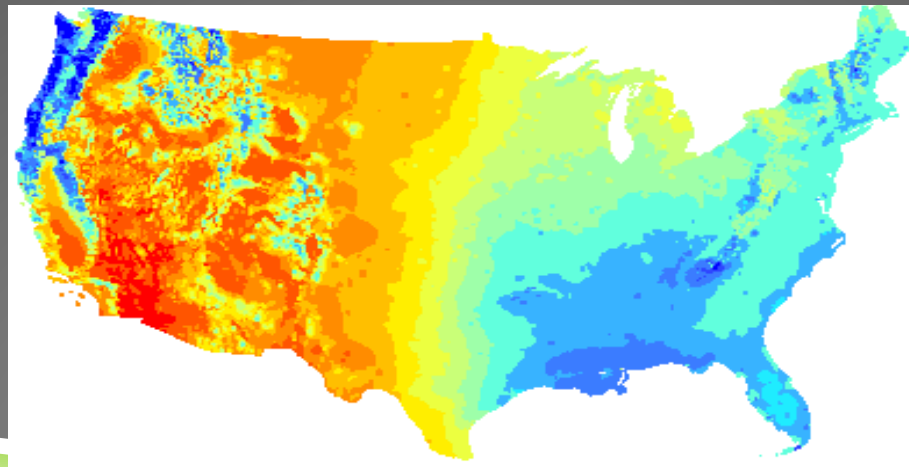
**Electricity Water Use: Liters per Mwh**



Source: *The Electric Power Research Institute (EPRI)*

# UTAH AND WATER

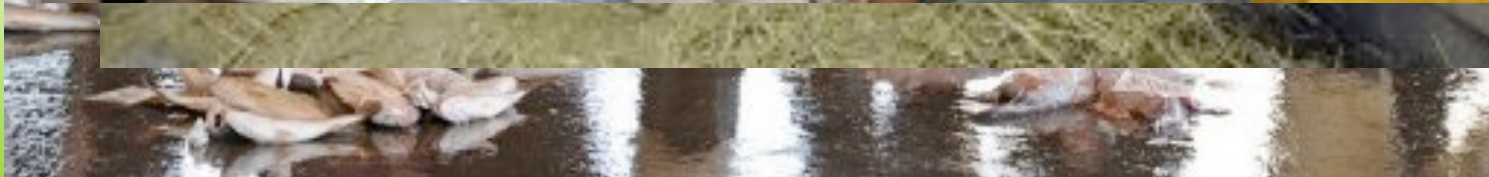
- ▶ Already facing serious water pressure
- ▶ Population of state expected to double in next 40 years
- ▶ Possible impacts of climate change – increasing droughts, less snowpack
- ▶ What kind of electricity-making should we choose? The kind that uses the most water?





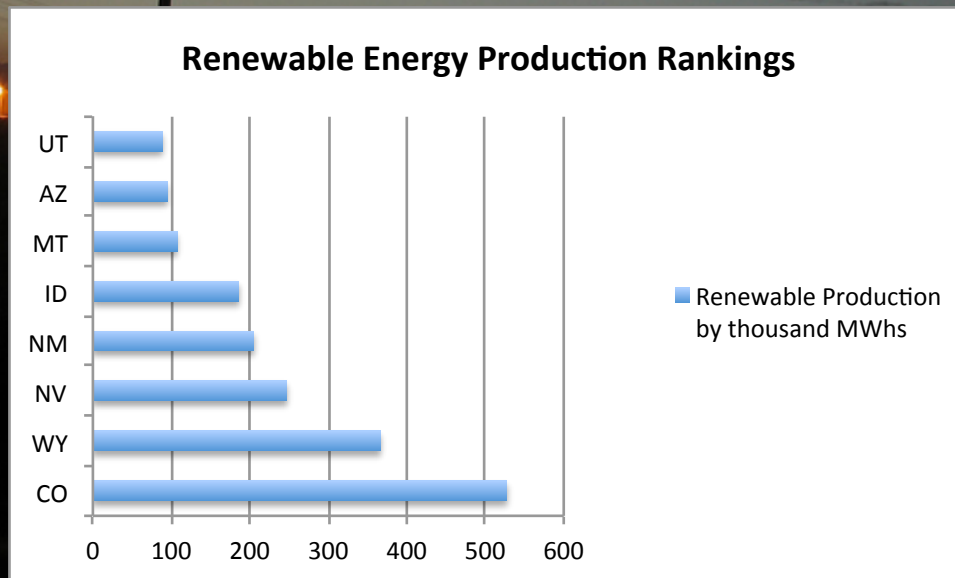
# FUKUSHIMA: THE IMPACTS

- ▶ Evacuations: 80,000
- ▶ Radioactivity in Water
- ▶ Radioactivity in Food
- ▶ Impacts on Agriculture
- ▶ Impacts on Fisheries
- \$137 billion in damages
- Inherently “safe” reactors? Then rescind the Price Anderson cap on Liability for new reactors



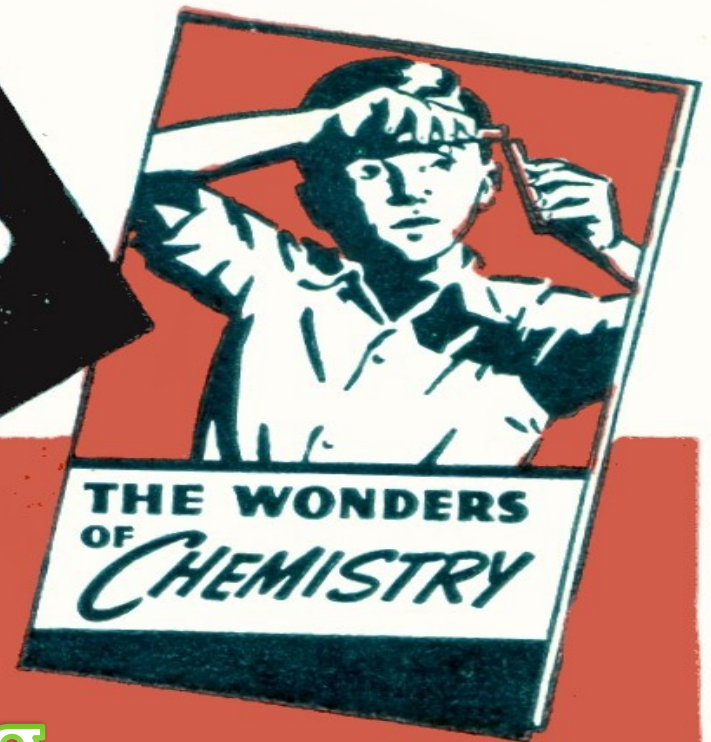
# ALTERNATIVES EXIST

- ▶ Only 2-3 percent of the electricity in Utah comes from wind and solar power
- ▶ Utah **WORST** renewable energy producer in the Intermountain West in the last 12 months, according to EIA data





**BOYS-IT'S  
FREE!**



*Exciting  
new book on*  
**Breeder Reactors**

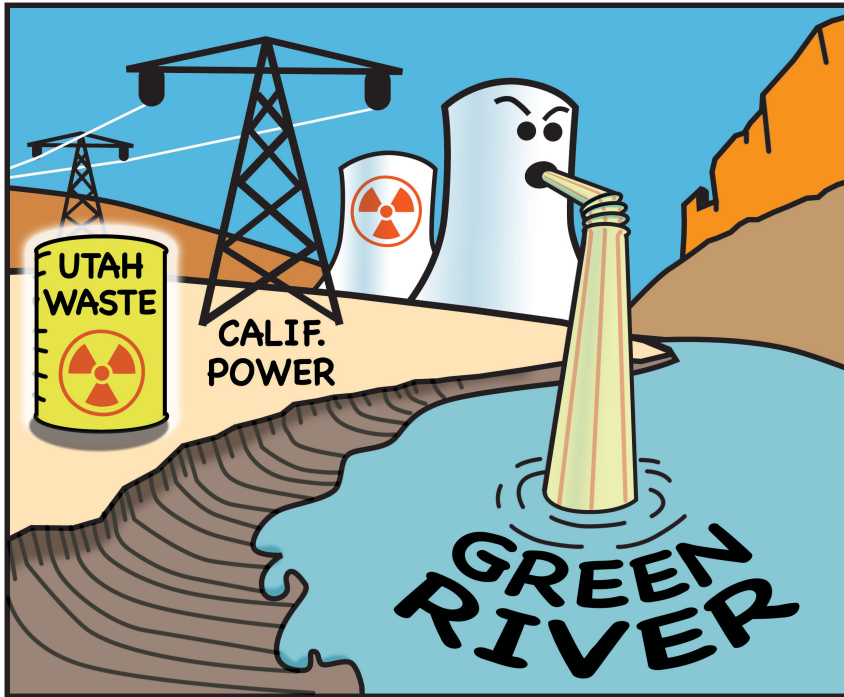
**Waste Reprocessing**

**Thorium Reactors**

**Dry Cooling**

**Small Modular Reactors**

**...and "THE WONDERS OF CHEMISTRY"**



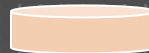
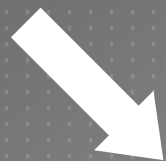
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## Reprocessing

Spent  
Fuel Rod



Plutonium—1%  
**(Reusable portion)**



Uranium—95%



Fission Products—4%